

Listing of Claims:

Claims 1-9 (Canceled).

10. (Currently Amended) The illumination switching apparatus according to claim 9 32, wherein each of the first shutter mechanism and the second shutter mechanism comprises one of a mechanical shutter which is mechanically opened and closed, and an electronic shutter which is electronically opened and closed.

11. (Currently Amended) The illumination switching apparatus according to claim 9 32, further comprising a shutter controller which opens the first shutter mechanism and closes the second shutter mechanism in a standard illumination observation mode, and which closes the first shutter mechanism and opens the second shutter mechanism in a total reflection illumination observation mode.

12. (Currently Amended) The illumination switching apparatus according to claim 9 32, wherein the respective laser beams output by the laser oscillators have different wavelengths.

Claims 13-30 (Canceled).

31. (Previously Presented) An illumination switching apparatus comprising:

an objective having a numerical aperture which enables total reflection illumination to be performed on a target;

5 at least two light sources including a first light source that comprises a laser oscillator and a second light source that comprises a laser oscillator;

10 at least two shutter mechanisms, which include a first shutter mechanism provided across an optical path of a first laser beam emitted by the first light source and a second shutter mechanism provided across an optical path of a second laser beam emitted by the second light source, and which cooperate to selectively permit the laser beam emitted by one of the light sources to be passed therethrough while interrupting the laser
15 beam emitted from another of the light sources;

an illumination system which guides a received one of the laser beams output from the at least two light sources to the objective; and

20 an illumination switching section which selects one of a first optical path and a second optical path, wherein when the first optical path is selected, the first laser beam output from the first light source is guided through the illumination system to travel along an optical axis of the objective to illuminate

the target in a standard observation mode, and wherein when the
25 second optical path is selected, the second laser beam output
from the second light source is guided through the illumination
system and the objective to illuminate the target in a total
reflection observation mode.

32. (Previously Presented) An illumination switching
apparatus comprising:

an objective having a numerical aperture which enables total
reflection illumination to be performed on a target;

5 a first light source including a first laser oscillator
which outputs a first laser beam;

at least one second light source including a second laser
oscillator which outputs a second laser beam;

10 an illumination system which guides a received one of the
first and second laser beams to the objective;

a first light transmission section which guides the first
laser beam, that is output from the first light source, to a
first optical path along which the first laser beam is guided
through the illumination system and along an optical axis of the
15 objective;

a second light transmission section which guides the second
laser beam, that is output from the second light source, to a

second optical path, along which the second laser beam is guided through the illumination system to realize the total reflection illumination on the target;

20 a first illumination switching section which includes a first shutter mechanism provided at a laser output terminal of the first laser oscillator, and which is selectively operable to permit the first laser beam output from the first laser oscillator to be guided to the first light transmission section, and to interrupt the first laser beam; and

25 a second illumination switching section which includes a second shutter mechanism provided at a laser output terminal of the second laser oscillator, and which is selectively operable to permit the second laser beam output from the second light source to be guided to the second light transmission section.

30 33. (Previously Presented) An illumination switching apparatus comprising:

an objective having a numerical aperture which enables total reflection illumination to be performed on a target;

5 a first laser oscillator which outputs a first laser beam;
a second laser oscillator which outputs a second laser beam;
an illumination system which guides a received one of the first and second laser beams to the objective;

a first shutter mechanism which is selectively operable to
10 pass therethrough and interrupt the first laser beam;

a second shutter mechanism which is selectively operable to
pass therethrough and interrupt the second laser beam;

a first optical fiber which transmits the first laser beam
that has passed through the first shutter mechanism;

15 a first laser emission section which emits the first laser
beam transmitted through the first optical fiber;

a total reflection microprism provided across a first
optical path formed in the illumination system for guiding light
20 along an optical axis of the objective, the total reflection
microprism reflecting the first laser beam, which has been
emitted from the first laser emission section, such that the
first laser beam travels through the first optical path;

a second optical fiber which transmits the second laser beam
that has passed through the second shutter mechanism;

25 a second laser emission section provided across a second
optical path formed in the illumination system for illuminating
the target using total reflection of light, the second laser
emission section guiding the second laser beam, transmitted
through the second optical fiber, to the second optical path; and

30 a shutter controller which opens the first shutter mechanism
and closes the second shutter mechanism in a standard

illumination observation mode for observing the target, and which closes the first shutter mechanism and opens the second shutter mechanism in a total reflection illumination observation mode for
35 observing the target.

34. (Previously Presented) An illumination switching method comprising:

selectively causing a first shutter mechanism to permit to pass therethrough or interrupt a first laser beam output from
5 a first laser oscillator;

selectively causing a second shutter mechanism to permit to pass therethrough or interrupt a second laser beam output from a second laser oscillator;

10 guiding the first laser beam, which has passed through the first shutter mechanism, along an optical axis of an objective via an illumination system, to illuminate a target by standard observation fluorescent light; and

15 guiding the second laser beam, which has passed through the second shutter mechanism, through the objective via the illumination system, to illuminate the target using total reflection of observation fluorescent light.

Claims 35 and 36 (Canceled).

37. (New) The illumination switching apparatus according to claim 33, wherein the first shutter mechanism is provided at a laser output terminal of the first laser oscillator, and the second shutter mechanism is provided at a laser output terminal of the second laser oscillator.

38. (New) The illumination switching apparatus according to claim 34, wherein the first shutter mechanism is provided at a laser output terminal of the first laser oscillator, and the second shutter mechanism is provided at a laser output terminal of the second laser oscillator.